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AMPHIBIANS AND REPTILES COLLECTED
BY THE
STREET EXPEDITION TO AFGHANISTAN, 1965

By

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INTRODUCTION

In June 1965, Mr. and Mrs. William S. Street began their expedition to Afghanistan. This was the second in their series of expeditions to survey the mammalian fauna of Southwest Asia and to secure specimens for the Field Museum of Natural History. An account of their first expedition to Iran in 1962-63 has been given by Lay (1967). Mr. Jerry Hassinger (1968), who accompanied the Afghanistan expedition, published an itinerary, a gazetteer, a description of the collecting localities, and a list of the mammals collected.

Although concerned primarily with the mammalian fauna, the expedition also made valuable collections of amphibians and reptiles in the areas visited; these were sent to the California Academy of Sciences for study. The stations in Afghanistan where herpetological material was obtained (the numbers do not necessarily correspond with station numbers for mammals presented by Hassinger) are shown on the accompanying map (fig. 1).

COLLECTING SITES

The following are the Street Expedition collecting sites for amphibians and reptiles in Afghanistan, given with location and elevation.

1. Jalalabad, 34°26' N., 70°25' E. 732 meters.
2. Paghman, 34°36' N., 68°56' E. 2440 meters.
3. 12 miles north of Jalalabad 2600 meters.
4. 64 miles by road east of Faizabad (?Zebak, 36°32' N., 71°21' E.).
5. 12 miles east of Eskhsham Wakhan (? = Ishkamish, 36°43' N., 71°34' E.).

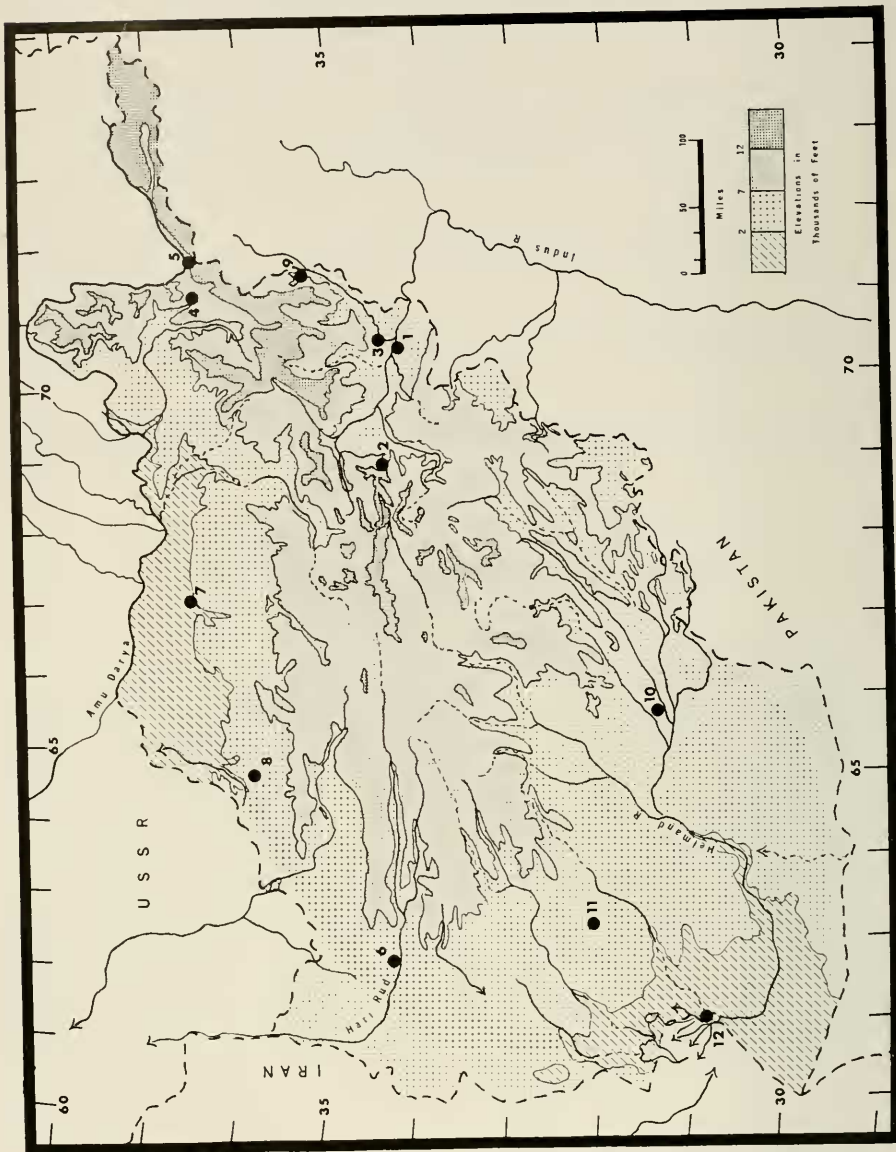


FIGURE 1. Map of Afghanistan with collecting stations of expedition numbered (refer to list of collecting stations, p. sup. 1a).

6. Herat, $34^{\circ}20' N.$, $62^{\circ}10' E.$ 1800 meters.
7. Mazar-i-Sharif, $36^{\circ}43' N.$, $67^{\circ}05' E.$ 457 meters.
8. Maimana, $35^{\circ}54' N.$, $64^{\circ}43' E.$ 884 meters.
9. Kamdesh, $35^{\circ}25' N.$, $71^{\circ}26' E.$

10. Kandahar, 31°36' N., 65°47' E. 1425 meters.
11. 30 miles west of Dilaram (48 kilometers west), 32°15' N., 62°50' E. 823 meters.
12. 16 kilometers (10 miles) south of Qala-i-Kang, 30°58' N., 61°54' E.

The present collection of 247 specimens includes six species of amphibians and 38 species of reptiles. The collection includes two new agamid species, and an additional seven species are recorded definitely from Afghanistan for the first time. The second known specimen from Afghanistan of the rare snake *Eryx elegans* was also collected by the expedition. Other records further extend our knowledge of the distribution of the Afghan herpetofauna.

ACKNOWLEDGMENTS

We wish to thank Dr. Robert Inger and Hymen Marx of the Field Museum of Natural History for permitting our study of this material. Dr. Ilya Darevsky of the Zoological Institute, Leningrad, kindly provided us with comparative material of *Cyrtodactylus fedtschenkoi*. Jerry Hassinger, Expedition Fellow of the Street Expedition of the Field Museum, provided a list of the collecting localities prior to publication of his paper. Above all, we call attention to and recognize the continuing splendid efforts and avid interest of Mr. and Mrs. William S. Street, who are enhancing our knowledge of the fauna of Southwest Asia.

Specimens in the collections of the Field Museum of Natural History, Chicago, are designated FMNH; California Academy of Sciences materials are coded CAS; specimens formerly in the collections of the Division of Systematic Biology of Stanford University and now on deposit at the California Academy of Sciences are cited as CAS-SU to indicate that the accompanying number is registered in the now closed Stanford catalogs.

SYSTEMATIC NOTES

Class AMPHIBIA

Order SALIENTIA

Family BUFONIDAE

Bufo andersonii Boulenger.

Bufo andersonii BOULENGER, 1883, Ann. Mag. Nat. Hist., ser. 5, vol. 12, p. 161 (type locality: India: Rajputana: Ajmere).

MATERIAL EXAMINED (21). CAS nos. 115902–115903 and FMNH no. 161037, 30°58' N., 61°54' E., 16 kilometers south of Qala-i-Kang [518 meters elevation], 17–19 November. FMNH nos. 161038–161042, 161044–161046, 161048–161050 and CAS nos. 115904–115907, Paghman, 34°36' N., 58°56' E. FMNH no. 161140 and CAS no. 115908, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation]. FMNH no. 161266, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

REMARKS. This species was recently recorded from Afghanistan for the first time (Clark, Clark, Anderson, and Leviton, 1969). The larger of the two females from Jalalabad measures 73 mm. from snout to vent. Neither is in breeding condition.

In the many specimens of *Bufo viridis* examined from various areas in South-west Asia (Afghanistan, northern, southwestern, southeastern Iran and Israel), the ridge on the inner side of the metatarsal is usually distinct, often a fold, and always smooth, lacking tubercles. In the specimens here identified as *B. andersonii*, as well as a specimen from Nepal (CAS-SU no. 15315), this ridge consists of a row of distinct tubercles. The fourth toe is webbed to the base of the second phalanx (second from the proximal end of the toe), i.e. one-half or more the length of the toe (in the Nepal specimen slightly less than half, but more than one-third). In all of these specimens the digits are prominently tipped with dark pigmentation, whereas in *B. viridis* the digits usually lack dark tips. The parotoid glands extend back beyond the insertion of the forelimbs. The size and shape of the parotoids are variable in *B. viridis*, in which they are often much longer than wide, but may be as wide as long. Minton (1966), says that in West Pakistan the greatest width of the parotoids is approximately equal to the length in *B. viridis* and uses this as one of the characters for separating the two forms. In adults of *B. andersonii* from eastern Afghanistan and eastern Nepal, the dorsum is irregularly mottled with gray, lacking the distinct spots usually found in females of *B. viridis*.

The three specimens from the Seistan basin, the 15 from Paghman, and the one from Kandahar all are small immature animals, the largest being 34 mm. from snout to vent. They are assigned to *B. andersonii* with some reservation. They agree with those from eastern Afghanistan in the tuberculate nature of the metatarsal ridge; the extent of webbing on the toes; the size and shape of the parotoids; the width of the interorbital space which is equal to or greater than the greatest width of the eyelid; and the shape of the snout, the profile of which slopes down and back, the lower margin posterior to the forward extent of the rostral (in *B. viridis* the interorbital width is usually distinctly less than the width of the eyelid, and the profile of the snout slopes down and forward, or may approach the vertical).

In these young specimens the height of the tympanum is one-half or less the diameter of the eye, in contrast to other specimens of *B. andersonii* examined and recorded in the literature, in which it is about two-thirds the diameter of the eye. In this respect they agree with *B. oblongus* Nikolsky in which the tympanum is said to be small. The distance between the fore and hind limbs is not distinctly greater than the greatest width of the head, however, and the tarso-metatarsal articulation does reach the tympanum when the leg is laid forward. *Bufo oblongus* from "Ssaman-Schahi" in eastern Iran has been synonymized

with *B. andersonii* by Nieden (1923) without comment. *Bufo persicus* Nikolsky from Seistan, Iran, is said to have small subquadrangular parotoid glands.

Worthy of note is the fact that five specimens of *B. viridis* from Kandahar have small short parotoids, the width about equal to the length, whereas FMNH no. 161266, from the same locality, has such characters as much longer parotoids in addition to the more extensive webbing and a tuberculate metatarsal ridge.

Qala-i-Kang is the northwesternmost locality recorded for this species, unless *B. oblongus* is in fact a synonym of *B. andersonii* as Nieden states.

The status of the various nominal forms related to *Bufo viridis* is far from clear. Probably all of these, *B. andersonii*, *B. oblongus*, *B. olivaceus*, *B. pentoni*, *B. persicus*, and *B. surdus* represent post-Pleistocene isolation of populations of once more continuously distributed *B. viridis*.

Bufo viridis Laurenti.

Bufo viridis LAURENTI, 1768, Synop. Rept., p. 27 (type locality: Austria: Vienna).

MATERIAL EXAMINED (17). FMNH nos. 161065–161068 and 161071, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH no. 161091 and CAS no. 115909, 19 kilometers east of Ishkamish, 36°42' N., 71°46' E., collected by S. Atakah. FMNH no. 161110, Mazar-i-Sharif, 36°43' N., 67°05' E. [457 meters elevation], 1–3 September. FMNH no. 161171, Paghman, 11–12 July. CAS no. 115910, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September. CAS nos. 115911–115912, Paghman, 16 July. FMNH nos. 161265, 161269, 161271 and CAS nos. 115913–115914, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

REMARKS. The largest female (78 mm. from snout to vent) is from Maimana and contains ripe ova. Other specimens do not appear to be in breeding condition. The largest male (68 mm.) is from Kandahar. Stomach contents consist mainly of beetles and ants.

Family RANIDAE

Rana cyanophlyctis Schneider.

Rana cyanophlyctis SCHNEIDER, 1799, Hist. Amph., vol. 1, p. 137 (type locality: eastern India).

MATERIAL EXAMINED (1). FMNH no. 161082, 48 kilometers west of Dilaram, 32°15' N., 62°50' E. [823 meters elevation], 15 November.

REMARKS. This widely distributed species was recently recorded for the first time in Afghanistan (Clark, Clark, Anderson, and Leviton, 1969) from Jalalabad and Khost in the eastern part of the country. The present record appears to be on the periphery of the known range. It is known from south-eastern Iran near the coast. Its present distribution in the low arid regions south and east of the Iranian Plateau is probably discontinuous.

Rana ridibunda Pallas.

Rana ridibunda PALLAS, 1771, Reise Rus. Reich., vol. 1, p. 458 (type locality: USSR: Gurev, north coast of Caspian Sea).

MATERIAL EXAMINED (7). FMNH no. 161055, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH nos. 161114–161115, CAS no. 115915, Herat area, 34°20' N., 62°10' E. [1800 meters elevation], 29 August. FMNH nos. 161124–161125 and CAS no. 115916, 102.4 kilometers by road east of Faizabad, northern Afghanistan (Zebak, 36°32' N., 71°21' E.), 18 August.

REMARKS. None of the mature females (all from Zebak) are in breeding condition. The largest measures 89 mm. from snout to vent.

Rana sternosignata Murray.

Rana sternosignata MURRAY, 1885, Ann. Mag. Nat. Hist., ser. 5, vol. 16, p. 120 (type locality: West Pakistan: Quetta).

MATERIAL EXAMINED (5). CAS nos. 115917–115918, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH nos. 161221, 161224, Paghman, 16 July. FMNH no. 161270, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

REMARKS. FMNH no. 161224 is a recently transformed young with the tail partially unresorbed. It measures 31 mm. The large female (97 mm.) from Kandahar contains ripe ova. The largest male measures 82 mm. from snout to vent.

Class REPTILIA
Order CHELONIA
Family TESTUDINIDAE

Testudo horsfieldii Gray.

Testudo horsfieldii GRAY, 1884, Cat. Tort. Crocod. Amphib., British Mus., p. 7 (type locality: Afghanistan).

MATERIAL EXAMINED (1). FMNH no. 161207, Paghman, 34°36' N., 68°56' E. [2440 meters elevation], 18 July.

REMARKS. In this specimen, a female, the carapace measures 180 mm. in length, by 152 in width.

Order SQUAMATA
Suborder SAURIA
Family AGAMIDAE

Agama agilis Olivier.

Agama agilis OLIVIER, 1807, Voy. Emp. Othoman, vol. 4, p. 394, and atlas, pl. 29, fig. 2 (type locality: Iraq: neighborhood of Baghdad).

MATERIAL EXAMINED (15). FMNH nos. 161191–161192 and CAS no. 115921, Paghman vicinity, 34°36' N., 68°56' E. [2440 meters elevation], 12–22

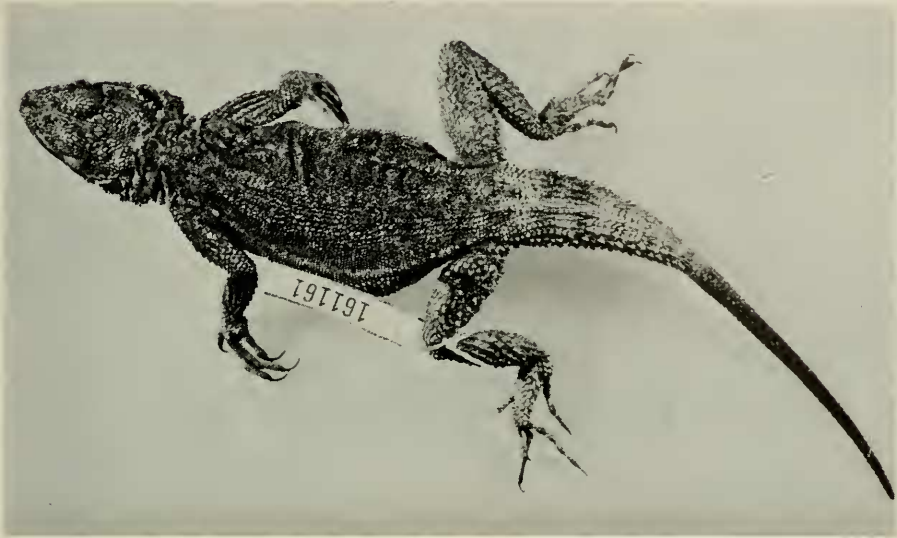


FIGURE 2. *Agama agrorensis* (Stoliczka) from Jalalabad (FMNH no. 161161).

July. FMNH nos. 161197–161199, 161201 and CAS nos. 115922–115923, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September. FMNH no. 161133 and CAS no. 115920, 102.4 kilometers by road east of Faizabad, northern Afghanistan (Zebak, 36°32' N., 71°21' E.), 18 August. FMNH nos. 161117–161119 and CAS no. 115919, Herat area, 34°20' N., 62°10' E. [1800 meters elevation], 29 August.

REMARKS. None of the females contain large eggs in the ovaries.

Agama agrorensis (Stoliczka).

(Figure 2.)

Stellio agrorensis STOLICZKA, 1872, Proc. Asiatic Soc. Bengal, July 1872, p. 128 (type locality: India: Sussel Pass, at the entrance to the Agror Valley, 6000 feet, Hazara District, north-western Punjab).

Agama agrorensis, BOULENGER, 1885 Cat. Liz. British Mus., vol. 1, p. 363.

MATERIAL EXAMINED (1). FMNH no. 161161, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. This species, which occurs in Punjab, Kashmir, and Chitral, is here recorded within the borders of Afghanistan for the first time. Its occurrence in the valley of the Kabul River is not unexpected in view of the other recent additions to the fauna of Afghanistan based on collections from this same area (Clark, Clark, Anderson, and Leviton, 1969). The present specimen, a female with eggs in the oviducts, measures 90 mm. from snout to vent. The tail is regenerated.

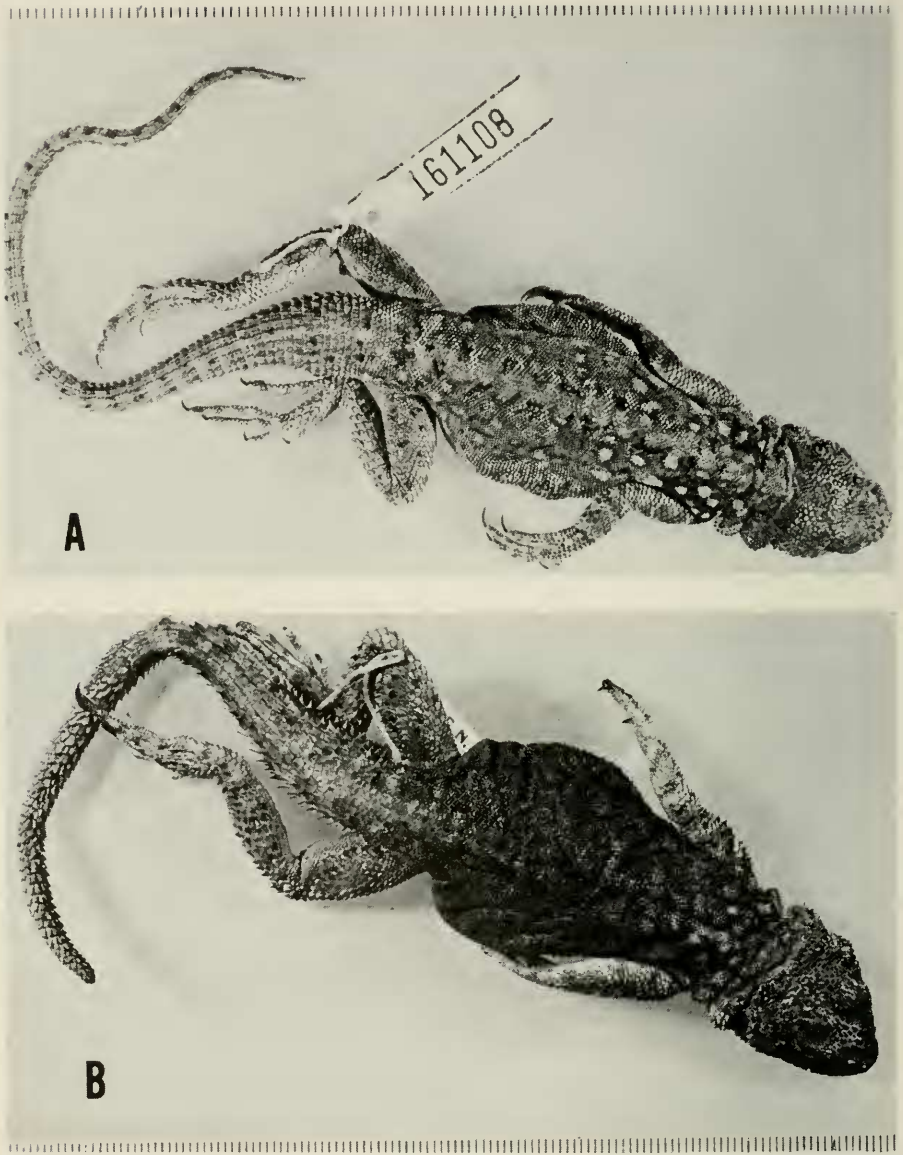


FIGURE 6. *Agama badakhshana* Anderson and Leviton, new species. A. Holotype from Mazar-i-Sharif (FMNH no. 161108). B. Paratype from 64 miles east of Faizabad (CAS no. 115924).



FIGURE 7. *Agama badakhshana* Anderson and Leviton, new species. Ventral view of paratype (CAS no. 115924).

***Agama badakhshana* Anderson and Leviton, new species.**

(Figures 6 A-B, 7.)

HOLOTYPE. FMNH no. 161108, female, Mazar-i-Sharif, northern Afghanistan, $36^{\circ}34'$ N., $67^{\circ}05'$ E., [457 meters elevation], collected 1-3 September 1965 by Street Expedition to Afghanistan.

PARATYPES. CAS no. 115924, male, 64 miles by road east of Faizabad (Zebak, $36^{\circ}32'$ N., $71^{\circ}21'$ E., 2653 meters elevation), northern Afghanistan, collected 18 August 1965 by Street Expedition to Afghanistan. CAS no. 115925, female, and FMNH no. 161175, male, Paghman, Afghanistan, $34^{\circ}36'$ N., $68^{\circ}56'$ E., [2440 meters elevation], collected 11-12 July 1965 by Street Expedition to Afghanistan.

DIAGNOSIS. Head and body depressed; tail longer than head and body; head scales smooth; caudal scales forming distinct annuli; 19-25 scales around tail at level of approximately fifth whorl; tympanum large, superficial; mid-dorsal enlarged scales smooth or faintly keeled, distinctly larger than ventrals; patch of enlarged mucronate scales on flanks, distinctly larger than ventral and dorsolateral scales, about equal to largest mid-dorsal scales; scales on dorsum of thigh very large and strongly keeled; mature males with large patch of callose abdominal scales.

DESCRIPTION OF HOLOTYPE. Head, body, and base of tail strongly depressed. Nostril in large nasal below canthus rostralis; upper head scales

smooth, slightly convex, largest on snout; 11/12 supralabials, 13 infralabials; group of enlarged spinose scales behind tympanum, similar group of somewhat smaller spinose scales on sides of neck, and small cluster on dorsolateral aspects of neck; all other scales of neck very small. Median dorsal scales of back enlarged, imbricate, somewhat heterogeneous in size, distinctly larger than dorsolateral and ventral scales, six to eight across middle of back, grading into dorsolaterals; mid-dorsal scales smooth, outer rows of enlarged scales weakly keeled; small scales of flanks grading into large patch of keeled, mucronate flank scales much larger than dorsolateral and ventral scales, about equal to largest mid-dorsals; small dorsals rounded or weakly keeled, subimbricate to juxtaposed; gular and ventral scales smooth, imbricate, gulars smaller than ventrals; no gular sac; distinct gular fold; skin of neck and sides of body loose, forming distinct dorsolateral fold from neck to groin and two transverse folds across neck in preserved specimen. No callose preanal or abdominal scales in holotype, which is a young female (both present in male paratypes). Hind limb reaches to eye. Tail depressed at base, covered with strongly keeled, mucronate scales much larger than any scales on head, limbs, or body; about 22 scales around tail at level of fifth whorl; scales arranged in regular annuli, three whorls to a tail segment, this segmental arrangement most distinct about a head-length posterior to vent; posteriormost whorl of each segment contains largest scales.

Color (in alcohol, initial fixation in formalin) olive gray above, enlarged median dorsal scales uniform gray, bordered on either side by longitudinal row of irregularly shaped dark spots; dark-edged white ocelli arranged in oblique rows on back, much more distinct on anterior part of back; flanks mottled with dark gray; tail with small dark spots arranged to give impression of narrow crossbars; venter grayish-white, chin and throat marbled with gray; limbs marbled with gray; fingers and toes with light gray bars.

The ovaries contain eggs, the largest about 2 mm. in diameter; oviducts are enlarged.

Measurements of holotype (in mm.): Snout-vent length, 69; tail length, 105; head length (tip of snout to angle of jaw), 18; hind limb, 46.

PARATYPES. Unfortunately, the skulls of the three paratypes have been crushed; all features of squamation are intact, however. CAS no. 115924, a male, has about eight rows of callose preanal scales, a large abdominal patch, and a small gular patch of callose scales. Dorsolateral and flank scales are much more strongly keeled and mucronate, the dorsal scales of limbs and tail having particularly prominent keels and mucrones. The ocelli on the dorsum are less distinct than in the holotype and the dorsal surfaces of head, body, and limbs have scattered small dark flecks, the venter is gray, the throat reticulated with darker gray.

The male from Paghman has somewhat less strongly keeled scales than does

CAS no. 115924, and the callose scales are less prominent, none appearing on the gular region; it also has a few scattered enlarged scales on the dorsum in addition to the enlarged mid-dorsal scales, resembling in this respect *Agama caucasica*. The female from Paghman has flatter, more distinctly imbricate dorsolateral scales than does the holotype. There are eggs in the ovaries. While not as prominent as in the male, callose preanal and abdominal scales are present. The two Paghman specimens have the more prominently enlarged flank scales.

Measurements of paratypes (in mm.):

Museum number	Snout-vent length	Tail length	Head length	Hind limb
CAS 115924	82	regenerated	22	62
CAS 115925	80	136	22	60
FMNH 161175	81	151	21	62

REMARKS. This taxon is most closely related to *Agama himalayana*, from which it differs in having a large patch of strongly enlarged scales on the flank, a large abdominal patch of callose scales (in this regard like *A. himalayana sacra* of Tibet), fewer scales around the thickest part of the tail, and larger scales on the upper surface of the thigh.

It is readily distinguished from *Agama agrorensis* in which the enlarged mid-dorsal scales are prominently keeled.

Its range is to the west of *A. himalayanum*. We have no information as to its habitat, although its morphology suggests it is a rock-dwelling form as are other species in this group. Its elevational range appears to be considerable, since Mazar-i-Sharif lies at 457 meters, while Paghman and the area east of Faizabad are over 2400 meters. Hassinger (1968) lists the following biotopes for the localities where this species was taken: Mazar-i-Sharif—"Clay and loess, Slope and plateau, Rock, Structure, and Watercourse, in dry, montane, and steppe habitat"; Zebak—"Slope and plateau, Structure, Watercourse, and Rock, in dry, montane habitat"; Paghman—"Slope and plateau, Structure, Watercourse, and Rock, in dry, montane habitat."

We recognize this form at the species level pending more detailed information regarding its distribution and variation.

Agama caucasica (Eichwald).

Stellio caucasicus EICHWALD, 1831, Zool. spec. Ross. Polon., vol. 3, p. 187 (type locality: USSR: Tiflis and Baku, Transcaucasia).

Agama caucasica, BOULENGER, 1885, Cat. Liz. British Mus., vol. 1, p. 367.

MATERIAL EXAMINED (20). FMNH nos. 161058-161062, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH nos. 161174, 161176 and CAS no. 115926, Paghman, 11-12 July. FMNH nos. 161209-161212, 161214-161215, 161219 and CAS nos. 115927-115931, Paghman, 16 July.

REMARKS. The smallest juvenile, collected in mid-July, has a snout-vent



FIGURE 3. *Agama erythrogastra* (Nikolsky) from vicinity of Paghman (FMNH no. 161187).

length of 54 mm., tail 81. The largest male measures 157, the largest female 117 mm. from snout to vent. Stomachs examined contain blossoms and leaves as well as arthropod remains, mostly beetles and ants. The largest ovarian eggs are about 2 mm. in diameter.

Agama erythrogastra (Nikolsky).

(Figure 3.)

Stellio erythrogastra NIKOLSKY, 1896, Ann. Mus. Zool. Acad. Imp. Sci. St. Pétersbourg, vol. 1, pp. 370-371 (type locality: eastern Iran: Kalender Abad and Ferimun).

Agama erythrogastra, NIKOLSKY, 1915, Faune Russie, vol. 1, pp. 119-121.

MATERIAL EXAMINED (6). FMNH nos. 161187, 161189-161190 and CAS no. 115932, Paghman vicinity, 34°36' N., 68°56' E. [2440 meters elevation], 12-22 July. FMNH no. 161195 and CAS no. 115933, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September.

REMARKS. This constitutes the first record of this species from Afghanistan. Its previously known distribution included northeastern Iran and southeastern Turkmen at elevations of 3000-5000 feet. Its occurrence at Maimana is thus not unexpected, but its discovery at Paghman is particularly noteworthy. Terentjev and Chernov (1949) state that this species lives in clayey and sandy-loamy soils, found mainly in areas with colonies of *Rhombomys*, utilizing their burrows for retreat in the Badkhyz region of Turkmen. They were found on

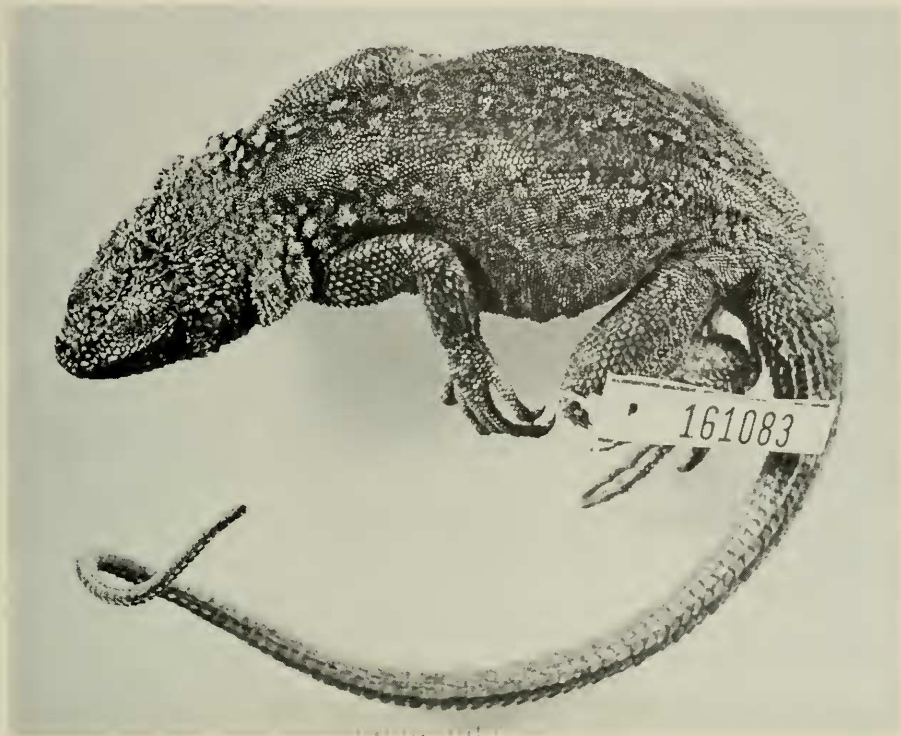


FIGURE 4. *Agama himalayanum* (Steindachner) from 19.2 km. east of Eskhsham Wakhan (FMNH no. 161083).

man-made rock piles in Iran (Clark, Clark, and Anderson, 1966), and apparently avoid vertical slopes and rock outcrops, in contrast to other species in this group of *Agama*.

While there are no ecological data accompanying the herpetological materials acquired by the Street Expedition, it is noteworthy that Hassinger (1968) lists *Rhombomys opimus* as collected at Maimana, where one of the prevalent biotopes is clay and loess.

Terentjev and Chernov (1949) say that *A. erythrogastra* feeds on insects, mainly beetles and caterpillars. The stomachs examined here contain grasshoppers, ants, and beetles. No plant material is present. The largest male measures 147 mm. from snout to vent, tail 186. The single mature female has a snout-vent length of 111 mm., tail 133, and contains small ovarian eggs.

***Agama himalayana himalayana* (Steindachner).**

(Figure 4.)

Stellio himalayana STEINDACHNER, 1869, Reptilia. In: Reise österr. Fregatte Novara. . Zool. Theil., vol. 1, p. 22 (type locality: Kashmir: Ladakh).



FIGURE 5. *Agama lehmanni* (Nikolsky) from Mazar-i-Sharif (FMNH no. 161109).

Agama himalayana, BOULENGER, 1885, Cat. Liz. British Mus., vol. 1, p. 362.

Agama himalayana himalayana, SMITH, 1935, Fauna British India, Reptilia, vol. 2 (Sauria), p. 213.

MATERIAL EXAMINED (7). FMNH nos. 161083, 161085–161088 and CAS nos. 115934–115935, 19.2 kilometers east of Ishkamish, 36°43' N., 71°34' E., collected by S. Atakah.

REMARKS. This appears to be the first definite published record for Afghanistan. Smith (1935) gives the range as Kashmir and the adjacent country in eastern Turkestan and western Tibet. It is found in Chitral and Ladakh. Terentjev and Chernov (1949) state that it is found in the Himalayas, Trans-Himalayas, southern Tibet, Hindu Kush, the ridge system of the Pamiro-Alai west up to the Pamir inclusive and southern part of Tien Shan; not known north of the Fergana Valley.

Agama lehmanni (Nikolsky).

(Figure 5.)

Stellio lehmanni NIKOLSKY, 1896, Ann. Mus. Zool. Acad. Imp. Sci., St. Pétersbourg, p. xiv (type locality: USSR: Fergana and Bucharja).

Agama lehmanni, BEDRIAGA, 1907, Rept. Przewalsky Exped., vol. 3, p. 126, pl. 3, fig. 2.

MATERIAL EXAMINED (1). FMNH no. 161109, Mazar-i-Sharif, 34°43' N., 67°05' E. [457 meters elevation], 1–3 September.

REMARKS. Terentjev and Chernov (1949) give the distribution of this species as the mountains of the southeastern part of central Asia north to the Fergana Valley, west to the Nura Tau and Kugitang ridges, east to the Darvaz Ridge, south to northern Afghanistan inclusive. We find no previously published locality for Afghanistan, however.

This species is said to be a mountain lizard, found at elevations up to 3400 meters, but also frequenting rocks of steep slopes of canyons, and on more or less gentle slopes covered with disintegrating rock, occasionally near mountain rivers and creeks and in loessy hills near mountains (Terentjev and Chernov, 1949). Prevalent biotopes in the Mazar-i-Sharif area include "Clay and loess, Slope and plateau, Rock, Structure, and Watercourse, in dry montane, and steppe habitat" (Hassinger, 1968).

The present specimen, a male, measures 100 mm. from snout to vent, tail 166. It was compared with a specimen (CAS no. 94489) from the Gissarski Range of northwest Tajikistan. Both specimens differ from the descriptions given by Nikolsky (1915) and Terentjev and Chernov (1949) in that the abdominal and gular scales are faintly but distinctly keeled under magnification, as are the scales of the snout and forehead. In other respects they are in good agreement with the published descriptions. The stomach of the Afghan specimen contains grasshopper remains.

***Agama nupta nupta* de Filippi.**

Agama nupta DE FILIPPI, 1843, Gior. Istit. Lombardo Sci., Lett., Arti, Biblioth. Italiana, vol. 6, p. 407 (type locality: Iran: Persepolis).

Agama nupta nupta, MINTON, 1966, Bull. American Mus. Nat. Hist., vol. 134, pp. 91–92.

MATERIAL EXAMINED (10). FMNH no. 161077, 48 kilometers west of Dilaram, 32°15' N., 62°50' E. [823 meters elevation]. FMNH nos. 161257–161258, 161260, 161262–161263 and CAS nos. 115936–115938, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

REMARKS. The largest female has a snout-vent length of 131 mm., tail 189. The largest male measures 146 mm. from snout to vent. The smallest juvenile is 74 mm. from snout to vent. Females from Kandahar and west of Dilaram have eggs up to 3 mm. in diameter in the ovaries.

***Agama nuristanica* Anderson and Leviton, new species.**

(Figure 8.)

HOLOTYPE. FMNH no. 161136, adult male, Kamdesh, eastern Afghanistan, [1342 meters elevation], collected 13–17 October, 1965 by Street Expedition to Afghanistan.

PARATYPE. CAS no. 115939, female, same data as holotype.

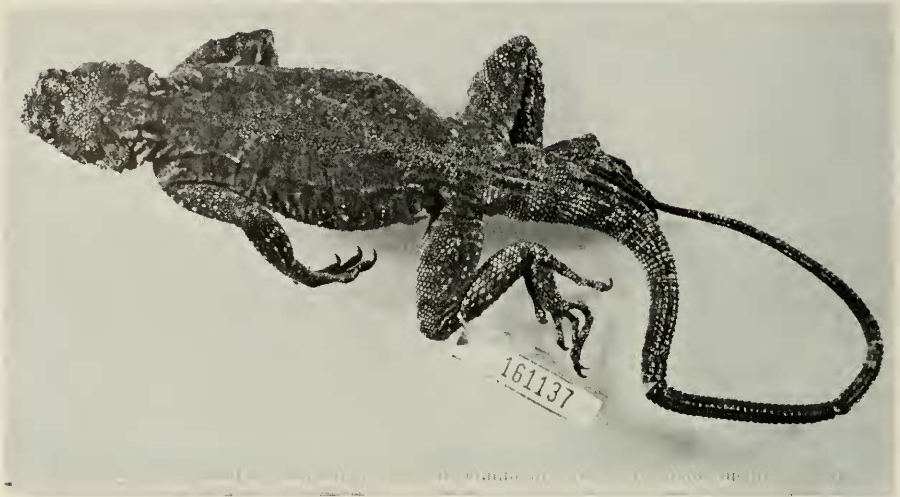


FIGURE 8. *Agama nuristanica* Anderson and Leviton, new species. Paratype from Kamdesh (CAS no. 115939).

DIAGNOSIS. Head and body depressed; tail longer than head and body; segmentation into whorls composed of four regular annuli barely distinct; about 45 scales around thickest part of tail; tympanum large, superficial; largest scales of back not arranged in regular rows and somewhat heterogeneous in size, a few about twice as large as largest ventral scales, strongly keeled, dorsolateral surfaces covered by minute granules (much smaller than found either in *A. agrorensis* or *A. tuberculata*; flanks with scattered enlarged scales, not grouped in patches, small scales granular; limbs above covered with strongly heterogeneous scales, numerous greatly enlarged scales among much smaller ones, the smaller almost granular; large scales neither grouped in patches nor imbricate, but strongly spinose.

DESCRIPTION OF HOLOTYPE. Head, body, and base of tail strongly depressed. Nostril in large scale below canthus rostralis; upper head scales unequal, rugose to bluntly keeled, largest on snout; 13 supralabials, 11/12 infralabials; three clusters of enlarged spinose scales behind tympanum, large cluster below, and cluster in front of tympanum, cluster above tympanum and two small clusters in line with this on sides of neck; all other scales of neck minute but spinose, mid-dorsal line of slightly enlarged scales on neck; median dorsal scales of back enlarged, largest about twice size of largest ventrals, strongly keeled, imbricate, heterogeneous, in 10–12 longitudinal rows, and strongly set off from adjacent minute scales of back and flanks; enlarged mid-dorsal scales begin at level of insertion of forelimbs becoming gradually larger posteriorly; scattered enlarged, conical, mucronate scales on flanks, somewhat linearly arranged, both transversely and longitudinally, many times larger than minute, granular, mucronate scales of

back and flanks, largest tubercles being about equal to largest mid-dorsals; upper surfaces of limbs covered with flat, subimbricate, weakly keeled heterogeneous small scales with numerous strongly keeled, tubercular large scales; gular and ventral scales smooth, imbricate, gulars smaller than ventrals; no gular sac; distinct gular and collar folds; skin of neck and sides of body loose, forming several transverse folds across neck and dorsolateral fold from neck to groin in preserved specimen. A preanal patch of callose scales involving about 7 transverse scale rows, and an abdominal patch involving about 17 transverse rows and 17 longitudinal rows at its widest point. Hind limb reaches eye. Tail depressed at base, covered with keeled mucronate scales about twice as large as largest mid-dorsals, not as large as largest tubercles on limbs; about 45 scales around thickest part of tail; scales arranged in regular annuli, but no distinctly differentiated tail segments as in other large agamas.

Color (in alcohol, initial fixation in formalin) olive brown above, head and limbs dark gray, anterior and posterior corners of eyelids cream, three short dark bars on supraciliary region, middle one descending across eye; enlarged mid-dorsal scales light gray interspersed with dark flecks; enlarged tubercles on flanks very light gray, contrasting sharply with olive brown ground color; lower surfaces mottled gray and dirty white, throat medium gray with several cream spots; posterior two-thirds of tail very dark brown, nearly black above; fingers and toes dark cross-barred.

Measurements of holotype (in mm.): Snout-vent length, 131; tail length, 245+ (tip missing); head length (tip of snout to angle of jaw), 37; hind limb, 110.

PARATYPE. In the single paratype, a female, all of the scales are less strongly keeled, less mucronate; it lacks callose ventral scales, but agrees with the holotype in all other characters mentioned.

Measurements of paratype (in mm.): Snout-vent length, 93; tail length, 183; head length, 26; hind limb, 74.

There are small eggs in the ovaries.

REMARKS. This species appears to be most closely related to *Agama tuberculata*, and Smith's (1935, p. 215) record of the latter from Kabul may refer to this species. We have compared our specimens with nine specimens of *A. tuberculata* from Nepal and find several striking differences. The Nepal specimens are darker, with numerous light spots over the dorsum, whereas the Afghan specimens have only the scattered conical, enlarged scales of the flanks contrasting with the olive ground. The lateral scales are smaller in the Afghan specimens, the scales on the top of the head more rugose, and the nasal is separated from the rostral by one or two scales. In the Nepal specimens the nasal is in contact with the rostral. The enlarged mid-dorsal scales of the Afghan specimens are far more sharply set off from the small dorsals than in *A. tuberculata*, and the caudal segments are not distinct, while in the Nepal specimens

the caudal segments are well differentiated, each with four (plus one incomplete) annuli. The upper and lower portions of the arms and legs of the present species are much more strongly heterogeneous in squamation than are those of the Nepal animals. In *A. nuristanica* the gular scales are granular, while in *A. tuberculata* they are pointed and imbricate; the caudal scales of the former are far more truncate than are those of the latter.

The following information about the type locality, Kamdesh, is quoted from Hassinger (1968): "Prevalent biotopes: Conifer, Evergreen oak, Watercourse, and Structure in wet, montane habitat.

"Kamdesh is situated on a mountainside about 500 m. above the Bash Gal River, a tributary of the Kunar. Our camp was about 8 km. east of Kamdesh near the village of Kamu. Collecting was confined to elevations between 1300 and 2150 m.

"The mean temperature for 48 records, one every two hours for Oct. 13, 14, 15, and 16, was 18.0° C. with a mean max. of 31.8° C. and a mean min. of 10.5° C. There were scattered showers on the 15th and 17th.

"This locality is in that part of Afghanistan which receives precipitation sufficient to sustain forest from the left flank of the Indian monsoons. The terrain is mountainous with steep valleys and sheer cliffs. The climate and vegetation is unique for Afghanistan; nowhere else, except on other eastern mountains under the influence of the monsoons, can Afghan mountainside vegetation of comparable density be found."

Family ANGUIDAE

Ophisaurus apodus (Pallas).

Lacerta apoda PALLAS, 1775, Nov. Comment. Acad. Sci. Petropol., vol. 19, p. 435, pls. 9-10 (type locality: USSR: Naryn Steppe, on north coast of Caspian Sea).

Ophisaurus apodus, MERTENS AND MÜLLER, 1928, Abh. Senckenberg Naturf. Ges., vol. 41, p. 26.

MATERIAL EXAMINED (2). FMNH nos. 161121-161122, 102.4 kilometers, by road east of Faizabad, northern Afghanistan (Zebak, 36°32' N., 71°21' E., 2653 meters elevation), 18 August.

REMARKS. Both specimens are males, the longer 236 mm. from snout to vent, tail 462.

Family GEKKONIDAE

Agamura persica (Auguste Duméril).

Gymnodactylus persicus DUMÉRIL, 1856, Arch. Mus. Hist. Nat. Paris, vol. 8, p. 481 (type locality: Persia).

Agamura persica, BLANFORD, 1876, Eastern Persia, vol. 2, Zool. Geol., pp. 358-359.

MATERIAL EXAMINED (2). FMNH nos. 161053-161054, Paghman, 34°36' N., 68°56' E. [2440 meters elevation].

REMARKS. The male measures 52 mm. from snout to vent, the female 54. In both specimens the tails have been broken off just posterior to the basal constriction. These specimens agree in squamation with specimens examined from Esfahan Province in Iran. They are less distinctly marked, however. While the Iranian specimens have five distinct dark bars on the dorsum including one on the nape, the Afghan animals have an indistinct dark bar on the nape, one behind the shoulders, and one anterior to the sacrum. The overall coloration of these specimens, including the ground color and the darker bars on the limbs, is much lighter than in the Iranian geckos. The male has two distinct preanal pores, while one of three Iranian males has two distinct pores. Minton's (1966) material from West Pakistan lacked pores.

Minton (1966) places *Gymnodactylus agamuroides* Nikolsky in the genus *Agamura* along with *A. persica* (Duméril) and *A. femoralis* Smith. We have compared these three species and are reluctant to accept this generic allocation. *Agamura persica* differs from all other cyrtodactyloid geckos in Southwest Asia in the unique arrangement of the mental, which is truncate or rounded posteriorly, never pointed, the anterior infralabials which are longer than broad, the first infralabials nearly as long as the mental in some specimens, and the lack of postmental shields. The circumference of the tail is sharply reduced posterior to a basal swelling, is subcylindrical, and blunt at the end, never longer than the snout-vent length. In the 11 individuals examined from Iran and Afghanistan the rostral is completely divided, although Blanford (1876) stated that it was only partially divided in specimens he described as *A. cruralis* Blanford.

Both "*femoralis*" and "*agamuroides*" have large postmentals in contact behind the sharply pointed mental, anterior infralabials broader than long, tail tapering, not so sharply reduced near the base, and longer than the head and body. The head is longer in these two species, the head width going four and one half times in the snout-vent length, as opposed to three and three quarters to four times in *A. persica*. The dorsal tubercles are weakly subtriangular rather than hemispherical to subconical in *A. persica*. The scales of the head are polygonal, all edges in contact with adjacent scales, while in *A. persica* they are subcircular, tiny granules between the scales where they are not in contact.

We regard "*agamuroides*" as a member of the genus *Cyrtodactylus* as presently defined. It is closely related to *C. gastropholis* (Werner), and these two species have darkly pigmented peritonea and lower viscera, a feature they share with *A. persica*, but not with "*femoralis*," in which the peritoneum and lining of the viscera are without dark pigment.

The abdominal scales of both *A. persica* and "*femoralis*" differ from those of other cyrtodactyloids in that while they have a more or less free posterior margin, they do not overlap adjacent scales. At best they can be described as subimbricate, while those of *Cyrtodactylus agamuroides*, *C. gastropholis*, and

other Southwest Asian species of *Cyrtodactylus* are strongly imbricate. In both *A. persica* and "*femoralis*" the dorsal tubercles are broader than long and not arranged in regular rows, while in *C. agamuroides* the tubercles are longer than broad and form regular longitudinal rows.

From *A. persica* and all Southwest Asian *Cyrtodactylus*, "*femoralis*" differs in the distinctive development of the nostril region. The nostril sits atop a "turret-like" projection, the entire lower margin of which is formed by the extremely high first supralabial. Three strongly swollen nasals form the rest of the protuberance, and the rostral is excluded from contact with the nostril. In all Southwest Asian forms of *Cyrtodactylus* examined, and in *Agamura persica*, the rostral forms the anterior border of the nostril. In most Southwest Asian species of *Cyrtodactylus* (*C. heterocercus* is an exception) the tail is covered below, at least in its distal two thirds, with enlarged plates, two per segment, which rarely are longitudinally divided. This condition also maintains in *Agamura persica*, although the plates are narrower than in most forms of *Cyrtodactylus* and are more frequently partially or completely divided. In "*femoralis*," on the other hand, these plates are completely divided longitudinally, and there are three, rather than two, transverse series per caudal segment. In view of these features, and pending a much needed revision of Southwest Asian gekkonid genera, we cannot assign the nominal species *Agamura femoralis* Smith to either the genus *Agamura* or the genus *Cyrtodactylus*. We are of the opinion that it is as divergent from *Cyrtodactylus* as is *A. persica*, and equally different from *Agamura*, but do not agree with Smith (1935) that it is intermediate between the two genera.

***Bunopus tuberculatus* Blanford.**

Bunopus tuberculatus BLANFORD, 1874, Ann. Mag. Nat. Hist., ser. 4, vol. 13, p. 454 (type locality: Iran: Bahu Kalat; Pishin; Isfandak; near Bampur; Rigan, Narmashir; Tumb Island. West Pakistan: Baluchistan: Mand; Saman; Dasht).

MATERIAL EXAMINED (1). FMNH no. 161248, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

REMARKS. This small male measures 38 mm. from snout to vent, tail 40. It has three preanal pores and six dark bars on the dorsum.

***Cyrtodactylus caspius* (Eichwald).**

Gymnodactylus caspius EICHWALD, 1831, Zool. spec., vol. 3, p. 181 (type locality: USSR: Baku, on the Caspian Sea).

Cyrtodactylus caspius, UNDERWOOD, 1954, Proc. Zool. Soc., vol. 124, p. 475.

MATERIAL EXAMINED (19). FMNH no. 161063, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH nos. 161092–161096, 161099–161100, 161102–161103, 161106–161107 and CAS nos. 115940–115944, Mazar-i-Sharif, 36°43' N., 67°05' E. [457 meters elevation], 1–3 September. FMNH

no. 161130 and CAS no. 115945, 64 miles by road east of Faizabad (Zebak, $36^{\circ}32' N.$, $71^{\circ}21' E.$ [2653 meters elevation], 18 August).

REMARKS. The largest male has a snout-vent length of 69 mm. The largest female measures 66 mm. from snout to vent, tail 89. The smallest juvenile, collected in early September, has a snout-vent length of 33 mm., tail 43. The females have small (one mm.) eggs in the ovaries.

Cyrtodactylus fedtschenkoi (Strauch).

Gymnodactylus fedtschenkoi STRAUCH, 1887, Mem. Acad. Imp. Sci., St. Pétersbourg, ser. 7, vol. 35, pp. 46-47 (type locality: USSR: Samarkand; Bokhara; Gissar).

Cyrtodactylus fedtschenkoi, UNDERWOOD, 1954, Proc. Zool. Soc., vol. 124, p. 475.

MATERIAL EXAMINED (3). FMNH no. 161076, 48 kilometers west of Dilaram, $32^{\circ}15' N.$, $62^{\circ}50' E.$ [823 meters elevation], 15 November. FMNH nos. 161255-161256, Kandahar, $31^{\circ}36' N.$, $65^{\circ}47' E.$ [1425 meters elevation].

REMARKS. All three specimens are males, the largest 65 mm. from snout to vent, tail 90. The specimen from west of Dilaram was taken in a cave.

Cyrtodactylus scaber (Heyden).

Stenodactylus scaber HEYDEN, 1827, in Rüppell, Atlas N. African Rept., p. 15, pl. 4, fig. 2 (type locality: Arabia).

Cyrtodactylus scaber, UNDERWOOD, 1954, Proc. Zool. Soc., vol. 124, p. 475.

MATERIAL EXAMINED (5). FMNH nos. 161226, 161249, 161251 and CAS nos. 115946-115947, Kandahar, $31^{\circ}36' N.$, $65^{\circ}47' E.$ [1425 meters elevation].

REMARKS. Two of the specimens from Kandahar (CAS no. 115947 and FMNH no. 161251) are unusually dark, the dorsum brown with indistinct darker markings, and small, irregular white marks on many of the dorsal tubercles. The gular region and sides of belly are dusted with brown. In one juvenile from Kandahar there are seven indistinct dark crossbars on the dorsum, while in another of similar size the pattern is broken up into more or less quadrangular dark spots. The largest male is 45 mm. from snout to vent, the largest female is 49, and the smallest juvenile 28 mm. Females have eggs up to 2 mm. in diameter in the ovaries.

Cyrtodactylus watsoni (Murray).

Gymnodactylus watsoni MURRAY, 1892, Zool. Beloochistan and southern Afghanistan, pp. 68-69 (type locality: West Pakistan: Quetta).

Cyrtodactylus watsoni, MINTON, 1966, Bull. American Mus. Nat. Hist., vol. 134, p. 79.

MATERIAL EXAMINED (4). FMNH nos. 161165-161166, 161168 and CAS no. 115948, Jalalabad, $34^{\circ}26' N.$, $70^{\circ}25' E.$

REMARKS. This is the first record of this species from Afghanistan. Minton found it in West Pakistan on the Iranian Plateau from extreme northern Las Bela to Quetta and northeastward to Swat and the northern Punjab.

This species differs from *C. scaber*, to which it is closely allied, chiefly in the smaller ventral scales; our specimens have 34–37 across the middle of the belly, while *C. scaber* has 18–24. The males have six and seven preanal pores. Females have well developed eggs in the ovaries.

***Eublepharis macularius* (Blyth).**

Cyrtodactylus macularius BLYTH, 1854, Proc. Asiatic Soc. Bengal, vol. 23, p. 747 (type locality: India: Salt Range, Punjab).

Eublepharis macularius, JOHN ANDERSON, 1871, Proc. Zool. Soc., 1871, p. 163.

MATERIAL EXAMINED (1). FMNH no. 161142, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. The testes measure only 7 mm. in length in this mature male (about 127 mm. from snout to vent).

***Hemidactylus flaviviridis* Rüppell.**

Hemidactylus flaviviridis RÜPPELL, 1835, Neue Wirb. Faun. Abyssinia, p. 18, pl. 6, fig. 2 (type locality: Eritrea: Nassau Island).

MATERIAL EXAMINED (19). FMNH no. 161056, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH nos. 161143, 161145–161147, 161149, 161151–161152, 161154, 161156, 161159–161160 and CAS nos. 115949–115955, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. This appears to be the first record of this wide-ranging species in Afghanistan. Much of its distribution, from the shores of the Red Sea and around the shores of the Arabian Peninsula and Iran, is due to human agency. The movement of caravans may also account for its presence in Afghanistan.

These specimens lack dorsal tubercles, while the tails have at most two longitudinal rows, a dorsolateral and a ventrolateral row on each side. Almost all individuals are a uniform gray in preservative, wavy dark crossbars discernible in a few of the smaller specimens. The largest male measures 72 mm. from snout to vent, the largest female 69. There are no small juveniles, the smallest specimen measuring 45 mm. in snout-vent length. Females have eggs up to 3 mm. in diameter in the ovaries. One stomach examined contained a fly.

***Teratoscincus bedriagai* Nikolsky.**

Teratoscincus bedriagai NIKOLSKY, 1899, Ann. Mus. Zool. Acad. Imp. Sci. St. Pétersbourg, vol. 4, pp. 146–147 (type locality: eastern Iran: Zirkuch and Seistan).

MATERIAL EXAMINED (6). CAS no. 161033 and FMNH nos. 161032, 161034, 30°58' N., 61°54' E. 16 kilometers south of Qala-i-Kang [518 meters elevation], 17–19 November. FMNH nos. 161252, 161254 and CAS no. 115957, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

REMARKS. The single male, FMNH no. 171032, has a snout-vent length of 52 mm., the tail 26. The largest female, FMNH no. 161252, measures 62 mm. from snout to vent, the tail 35. There are 46–51 scales around the middle of the

body in these specimens. All have four dark transverse bars on the body, two on the tail; the crossbars of the back are crescentic, with paravertebral extensions reaching back to contact the succeeding crossbars. There are two vertical dark bars on the upper and lower lips and sides of chin anterior to the eye, and a vertical white bar on rostral and mental. The dark pattern contrasts more strongly with the ground color in juveniles than in adults.

Adult females have developing ovarian eggs. One specimen has a solpugid in the stomach, while another has well macerated arachnid remains.

***Teratoscincus scincus* (Schlegel).**

Stenodactylus scincus SCHLEGEL, 1858, Handl. Dierk., vol. 2, p. 16 (type locality: USSR: Turkestan: Ili River).

Teratoscincus scincus, BOULENGER, 1885, Cat. Liz. British Mus., vol. 1, pp. 12-13, pl. 2, fig. 3.

MATERIAL EXAMINED (9). FMNH nos. 161028-161030 and CAS nos. 115958-115959, 16 kilometers south of Qala-i-Kang, 31°05' N., 61°52' E. [518 meters elevation], 17-19 November. FMNH nos. 161079-161081 and CAS no. 115960, 32°15' N., 62°50' E., 48 kilometers west of Dilaram [823 meters elevation].

REMARKS. As in the preceding species, the nostril is surrounded by the rostral and four nasal shields; in this species the nostril is actually separated from contact with the rostral and all but one nasal, not by a rim of the lowermost nasal, but by a very thin crescentic scale which is nearly circumnasal. In this series of specimens there are 29-34 scales around the middle of the body, six to eight longitudinal rows of large cycloid scales on the occiput, from about 43 to 50 granules across the head between the posterior angles of the orbits. Juvenile specimens have four distinct transverse dark bars on the body, three or four on the tail; in adults these crossbars fade out, and six narrow longitudinal stripes run the length of the body on dorsum and flanks. In a young female, CAS no. 115959, with a snout-vent length of 63 mm., tail 39, the bars are beginning to fade, the lineate pattern beginning to appear, most distinct in the areas of the crossbars. In a female of 91 mm. snout-vent length the lineate pattern is well developed, the crossbars still faintly visible.

The females, collected in mid-November, have developing ovarian eggs. One specimen has numerous termites in the stomach.

Both the largest male and largest female measure 91 mm. from snout to vent. The smallest juvenile has a snout-vent length of 51 mm., tail 35.

Any decision regarding subspecific status of specimens from various areas of Southwest Asia awaits further analysis. According to Terentjev and Chernov (1949, p. 128), *T. s. scincus* differs from *T. s. keyzerlingii* Strauch from Iran in having 28-32 scales around the body as opposed to 31-36 in the latter, 30-48 scales between the eyes in "*scincus*," 42-50 in "*keyzerlingii*." According to Nikolsky (1915, p. 55), *T. zarudnyi* Nikolsky 1907 (the type of which comes

from the same general locality as "*keyzerlingii*") has 50 granules between the eyes and six longitudinal rows of cycloid scales on the occiput, while "*scincus*" has 35 and nine respectively. He places "*keyzerlingii*" in the synonymy of "*scincus*." The type of *T. zarudnyi* no longer exists (Dr. I. Darevsky, personal communication).

Family LACERTIDAE

Acanthodactylus cantoris Günther.

Acanthodactylus cantoris GÜNTHER, 1864, Rept. British India, p. 73 (type locality: India: Ramnagar, Agra; holotype in British Museum).

MATERIAL EXAMINED (1). FMNH no. 161164, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. The single specimen is a badly damaged juvenile. The status of populations in Afghanistan is under investigation. Meristic data indicate that lizards from southern Afghanistan differ significantly from both *A. c. cantoris* and *A. c. blanfordi* (Clark, Clark, Anderson, and Leviton, 1969).

Eremias guttulata watsonana Stoliczka.

Eremias (Mesalina) watsonana STOLICZKA, 1872, Proc. Asiatic Soc. Bengal, 1872, pp. 86-87 (type locality: West Pakistan: Sind: between Karachi and Sakhar).

Eremias guttulata watsonana, SMITH, 1935, Fauna British India, Rept. Amphib., vol. 2, pp. 389-390.

MATERIAL EXAMINED (23). FMNH no. 161170 and CAS no. 115961, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation]. FMNH nos. 161227, 161229, 161231, 161235-161238, 161240-161245, 161247 and CAS nos. 115961-115968, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation].

Eremias nigrocellata Nikolsky.

Eremias nigrocellata NIKOLSKY, 1896, Ann. Mus. Zool. Acad. Imp. Sci., St. Pétersbourg, vol. 1, p. 371 (type locality: eastern Iran: Feizabad-Mondechi and Seistan).

MATERIAL EXAMINED (3). FMNH nos. 161127-161129, 102.4 kilometers by road east of Faizabad, northern Afghanistan (Zebak, 36°32' N., 71°21' E. [2653 meters elevation]), 18 August.

REMARKS. This is the first record of this species in Afghanistan. Its occurrence is not surprising, however, since it is known from southwestern Tajikistan and southern Uzbekistan near the Afghan border in the U.S.S.R. as well as from northeastern Iran.

These specimens agree well with two (CAS nos. 94485-94486) from Kurgan-Tepe, Tajikistan. All have two series of subdigital lamellae beneath the fourth toe, the two series of femoral pores widely separated, the second of the large supraoculars longer than the first, the parietal at least as broad as long, temporal shield small but distinct; no enlarged preanal plate. The row of frontal granules

is complete in two specimens, incomplete in one; in one specimen the subocular reaches the mouth on one side. All are gray above with small black spots and dark-margined white ocelli longitudinally arranged.

There are remains of various small arthropods in the stomachs, including ants, locusts, and a solpugid. The two females contain small ovarian eggs.

Counts and measurements are as follows: snout-vent length 50–55 mm.; tail 59–71; transverse rows of ventral plates 31–33, 16–17 in the longest series; 48–50 dorsals; 28–34 gulars; 11–13 plates in collar; 12–16 femoral pores.

Eremias velox persica Blanford.

Eremias persica BLANFORD, 1874, Ann. Mag. Nat. Hist., ser. 4, vol. 14, p. 31 (type locality: Iran: near Isfahan).

Eremias velox var. *persica*, BOULENGER, 1921, Monogr. Lacertidae, vol. 2, pp. 312–314.

MATERIAL EXAMINED (1). FMNH no. 161064, Paghman, 34°36' N., 68°56' E. [2440 meters elevation].

REMARKS. This specimen has a snout-vent length of 75 mm., tail 122; there is a large egg in each oviduct.

Family SCINCIDAE

Mabuya dissimilis (Hallowell).

Euprepes dissimilis HALLOWELL, 1860, Trans. American Philos. Soc., vol. 11, p. 78 (type locality: Bengal).

Mabuya dissimilis, BOULENGER, 1887, Cat. Liz. British Mus., vol. 3, p. 175.

MATERIAL EXAMINED (1). FMNH no. 161162, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. This is the second specimen of this skink from Afghanistan. It was recently reported for the first time within Afghan limits from a locality near Jalalabad in the Kabul River valley (Clark, Clark, Anderson, and Leviton, 1969).

This female measures 72 mm. from snout to vent, tail about 114 mm.

Family VARANIDAE

Varanus bengalensis bengalensis (Daudin).

Tupinambis bengalensis DAUDIN, 1802, Hist. Nat. Rept., vol. 3, p. 67 (type locality: Bengal).

Varanus bengalensis, DUMÉRIL AND BIBRON, 1836, Erp. Gen., vol. 3, p. 480.

Varanus (Indovaranus) bengalensis bengalensis, MERTENS, 1942, Abh. Senckenberg Naturf. Ges., vol. 462, p. 13.

MATERIAL EXAMINED (1). FMNH no. 161208, 19.2 kilometers north of Jalalabad [2600 meters elevation], 3 August.

REMARKS. This adult male measures 390 mm. from snout to vent; the tail is 663 mm. long.

TABLE I. Counts and measurements (in mm.) for snakes collected by Street Expedition to Afghanistan.

Species	Museum number	Sex	Snout-vent length	Tail	Ventrals	Caudals	Scale rows	Anal	Upper labials	Lower labials	Labials entering eye	Temporals
<i>Eryx elegans</i>	FMNH 161178	♂	229	46	159	36	35	1	9		0	
<i>Eryx tataricus</i>	FMNH 161123	♂	345	40	195	31	58	1	11/12		0	
	CAS 115969	♀	526	—	201	—	51	1	12		0	
	FMNH 161183	♀	ca. 460	46+	198+	26+	49	1	head smashed			
<i>Coluber ravergieri</i>	FMNH 161205	♀	263	25	194	29	55	1	12		0	
	FMNH 161177	♂	577	182	200	92	21	2	9	10	5&6	2+3+4
	FMNH unnumbered	♀	252	196	226	138	19	2	9	10	5&6/5	2+2
	CAS 115970	♂	248	95	220	135	19	2	9	10	5&6	2+3
	FMNH 161075	♀	476	198	223	117	19	2	9/10	10/11	5&6/6&7	2+2/2+3
<i>Coluber rhodorhachis</i>	FMNH 161185	♂	519+	150+	216+	77+	19	2	head missing			
	CAS 115971	♂	631	239	220	120	19	2	9	10	5&6	2+3
	FMNH 161112	♂	320	59+	177	51+	19	2	8	10	4&5	1+2
	CAS 115972	♀	400	89	176	65	19	2	8	10	4	1+2
	FMNH 161180	♂	516	145	172	73	19	2	7/8	10	3&4/4&5	1+2
<i>Psammodphis lineolatus</i>	FMNH 161204	♀	640	178	174	61	19	2	8/9	11	4/4&5	1+2
	FMNH 161184	♀	380	173	182	96	17	2	9	10	4,5,6	2+2
	FMNH 161113	♂	1012	415	193	116	17	1	8	9	4&5	2+2
	FMNH 161135	♂	620	230	194	125	17	2	8	10/9	4&5	2+2
	CAS 115973	♂	1159	443	194	109	17	2	8	9	4&5	2+2
<i>Ptyas mucosus</i>	CAS 115974	♀	450	145	215	115	17	2	8	10	4&5	2+2
	FMNH 161272	♀	484	165	202	113	17	2	8	10	4&5	2+2
	FMNH 161273	♂	607	209	196	109	17	1	head damaged			
	FMNH 161057	♂	840	163+	227	64+	27	1	12	13	0 (10 scales encircle eye)	
	FMNH 161206	♂	975+	165+	224	53+	27	1	head smashed			
<i>Naja oxiana</i>	FMNH 161138	♂	958	200+	200	65+	21	1	7	9/8	344	
<i>Echis carinatus</i>	FMNH 161072	♀	200	20	176	31	35	1	11	12	0	
<i>Vipera lebeina obtusa</i>	FMNH 161073	♂	287	33	173	34	37	1	11	12	0	
	FMNH 161139	♂	190	35	169	51	25	1	10	12/13	0	

Suborder SERPENTES
Family BOIDAE*Eryx elegans* (Gray).

Cusoria elegans GRAY, 1849, Cat. Snakes British Mus., p. 107 (type locality: Afghanistan).

Eryx elegans, BLANFORD, 1876, Eastern Persia, vol. 2, Zool. Geol., pp. 402-403.

MATERIAL EXAMINED (1). FMNH no. 161178, Paghman, 34°36' N., 68°56' E. [2440 meters elevation], 11-12 July.

REMARKS. This appears to be the second specimen of this rare snake ever recorded from Afghanistan. The type, a female, had no locality data other than "Afghanistan." The species is also known from northeastern Iran and Turkmen, U.S.S.R., in the Kopet-Dag. Terentjev and Chernov (1949, p. 229) give the range of counts as: 36-41 scale rows, 162-184 ventrals, 24-25 subcaudals. The type has 36 scale rows, 184 ventrals, and 24 subcaudals (Boulenger, 1893, p. 128). Counts for our specimen, a male, are given in table 1. In the specimen at hand the second supralabial is highest. The spurs are well developed.

Nikolsky (1916, p. 327) described the Kopet-Dag specimens as *Eryx jaculus czarewskii*, saying that they differed from *E. elegans* in having 38-40 scale rows, 149-169 ventrals, and 30-34 subcaudals, and in having the second, rather than third supralabial highest (as shown in Boulenger's illustration of the type, 1893, pl. 5, fig. 1). Comparison of these data with our specimen clearly indicates Terentjev and Chernov (1949, p. 229) were correct in placing "*czarewskii*" in the synonymy of "*elegans*."

Eryx tataricus (Lichtenstein).

Boa tatarica LICHTENSTEIN, 1823, in: Eversmann, Reise von Orenburg nach Buchara, p. 146 (type locality: U.S.S.R.: Aral Sea).

Eryx tataricus, TERENTJEV AND CHERNOV, 1949, Opred. presmyk. zemnov., Moscow, p. 230, fig. 105.

MATERIAL EXAMINED (4). FMNH no. 161183 and CAS no. 115969, Paghman vicinity, 34°36' N., 68°56' E. [2440 meters elevation], 12-22 July. FMNH no. 161123, 102.4 kilometers east of Faizabad, northern Afghanistan (Zebak, 36°32' N., 71°21' E. [2653 meters elevation], 18 August. FMNH no. 161205, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September.

REMARKS. Counts and measurements are given in table 1. These specimens agree in counts with the subspecies *E. t. speciosus* Tzarewsky (scale rows 47-59; ventrals 187-210; caudals 34-43 in males, 23-37 in females; Terentjev and Chernov, 1949, p. 231). Terentjev and Chernov (1949, p. 230) state that *E. t. speciosus* usually has two scales posterior to the internasals, while *E. t. tataricus* generally has not less than three; in the present specimens, one has 2, another has 3, and two specimens have 4 scales posterior to the internasals. Three specimens have a row of confluent dark spots on the ventrals, while one lacks such spots.

Family COLUBRIDAE

***Coluber ravergieri* Ménétries.**

Coluber ravergieri MÉNÉTRIES, 1832, Cat. rais. obj. zool. Caucase. St. Pétersbourg, p. 69 (type locality: U.S.S.R.: Baku).

MATERIAL EXAMINED (1). FMNH no. 161177, Paghman, 34°36' N., 68°56' E. [2440 meters elevation], 11–12 July.

REMARKS. This is a strikingly patterned individual, having 81 nearly black crossbars on a white (in alcohol, initial preservation in formalin) ground; there are about 44 spots on the tail, fusing into a dorsal stripe posteriorly; there are two rows of lateral dark spots, those on tail confluent to form a stripe; the venter is dusky, flecked with darker gray. See table 1 for counts and measurements.

***Coluber rhodorhachis* (Jan).**

Zamenis rhodorhachis JAN, 1865, in: de Filippi, Note viag. Persia, Milan, p. 356 (type locality: Persia).

Coluber rhodorhachis, PARKER, 1931, Ann. Mag. Nat. Hist., ser. 10, vol. 8, p. 516.

MATERIAL EXAMINED (5). FMNH no. 161075, one unnumbered specimen and CAS no. 115970, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation], 4 November. FMNH no. 161185 and CAS no. 115971, Paghman vicinity, 34°36' N., 68°56' E. [2440 meters elevation], 12–22 July.

REMARKS. These specimens are referred to *C. rhodorhachis* with the same reservations expressed previously (Leviton, 1959, p. 455–456; Clark, Clark, Anderson, and Leviton, 1969). The two smallest specimens are gray with small dark spots, arranged in alternating rows (checkerboard fashion, but the spots not in contact with one another), these spots fading out on the posterior third of tail. In a larger female (FMNH no. 161075) these spots are confluent to form narrow crossbars, one scale row wide, with a row of vertical dark bars down each flank, alternating in position with those of the back; again, this pattern fades out on the posterior third of body and the tail. CAS no. 115971 is more or less uniform tan, with no distinct pattern, while FMNH no. 161185 (in which the head is missing) is olive-gray above, the posterior margin of each dorsal scale of anterior third of body black, with a pink vertebral stripe on the anterior half of body.

In one specimen a postsubocular separates the sixth supralabial from the eye on the left side, while on the right this scale is fused with the sixth labial.

One specimen has a mouse in the stomach, another a small *Agama agilis*. Counts and measurements are given in table 1.

***Natrix tessellata tessellata* (Laurenti).**

Coronella tessellata LAURENTI, 1768, Syn. Rept., p. 87 (type locality: "in Japidia, vulgo Cars").

Natrix tessellata, BONAPARTE, 1834, Iconog. Faun. Ital., vol. 2, p. 11, pl.

Natrix tessellata tessellata, SOCHUREK, 1956, Burgenl. Heimatbl., Eisenstadt, vol. 18, p. 89.

MATERIAL EXAMINED (4). FMNH no. 161112, Mazar-i-Sharif, 36°43' N., 67°05' E. [457 meters elevation], 1-3 September. FMNH no. 161180 and CAS no. 115972, Paghman, 34°36' N., 68°56' E. [2440 meters elevation], 11-12 July. FMNH no. 161204, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September.

REMARKS. Counts and measurements are given in table 1.

Psammophis lineolatus (Brandt).

Coluber (Taphrometopon) lineolatus BRANDT, 1838, Bull. Sci. Acad. Imp. Sci., St. Pétersbourg, vol. 3, p. 243 (type locality: U.S.S.R.: Transcaspia).

Psammophis lineolatus, SMITH, 1943, Fauna British India, Rept. Amphib., vol. 3, p. 367.

MATERIAL EXAMINED (1). FMNH no. 161184, vicinity of Paghman, 34°36' N., 68°56' E. [2440 meters elevation], 12-22 July.

REMARKS. Counts and measurements are given in table 1.

Ptyas mucosus (Linnaeus).

Coluber mucosus LINNAEUS, 1758, Syst. Nat., ed. 10, vol. 1, p. 226 (type locality: India).

Ptyas mucosus, GÜNTHER, 1864, Rept. British India, p. 249.

MATERIAL EXAMINED (6). FMNH no. 161113, Herat area, 34°20' N., 62°10' E. [1800 meters elevation], 29 August. FMNH no. 161135, Kamdesh, 35°25' N., 71°26' E. [1342 meters elevation], 13-17 October. CAS no. 115973, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation], 4 November. CAS no. 115974, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September. FMNH nos. 161272-161273, Kandahar.

REMARKS. Counts and measurements are given in table 1. Two specimens, FMNH nos. 161113 and 161273, are unusual in having the anal undivided.

Sphalerosophis diadema schirazianus (Jan).

Periops parallelus var. *schirasiana* JAN, 1863, Elenco Sist. delgi Ofidi, p. 60 (*nomen nudum*).

Periops parallelus var. *schiraziana* JAN, 1865, in: de Filippé, Note Viag. Persia, Milan, p. 356 (original description; type locality Persia [Schiraz, according to Jan, 1863, *op. cit. supra*]).

Sphalerosophis diadema schirazianus, MERTENS, 1956, Jahresh. Ver. Vaterl. Naturk. Württemberg, vol. 111, p. 96.

MATERIAL EXAMINED (2). FMNH no. 161057, Paghman, 34°36' N., 68°56' E. [2440 meters elevation]. FMNH no. 161206, Maimana, 35°54' N., 64°43' E. [884 meters elevation], 7 September.

REMARKS. The stomach of FMNH no. 161057 contains the remains of two mice. Counts and measurements are given in table 1.

Family ELAPIDAE

Naja oxiana (Eichwald).

Tomyris oxiana EICHWALD, 1831, Zool. Spec., vol. 3, p. 171 (type locality: U.S.S.R.: Transcaspia).

Naja oxiana, BOULENGER, 1889, Trans. Zool. Soc., ser. 2, vol. 5, p. 103, pl. 11, fig. 2.

MATERIAL EXAMINED (1). FMNH no. 161138, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. Examination of the present specimen and a juvenile from Khorassan, eastern Iran, reveals the presence of a single small tooth on the maxillary posterior to the two fangs. At the time of Bogert's (1943) study of dentition in cobras, he had no specimens of this form, and his statement that *N. oxiana* had two teeth on the posterior part of the maxillary was based on the literature. He subsequently examined three specimens from the Tashkent Zoo (personal communication) and discovered that Eichwald's specimen was aberrant or inaccurately examined. Thus *N. oxiana* differs in this regard from the African members of the genus, which have two solid teeth, and from *Naja naja* from northern India, which have none. It resembles populations from Bengal eastward in this character, but differs from these as well as from peninsular Indian specimens in the consistently uniform dorsal coloration of adults, and in the higher ventral and subcaudal counts (186–213 and 62–75 in *N. oxiana*).

The Jalalabad specimen has a small shield (the cuneate) at the lip margin between the fourth and fifth infralabials on the left side. There are 27 scale rows on the neck. Other counts and measurements are given in table 1. The question as to whether there is intergradation or overlap between *N. oxiana* and *N. naja naja* in northern West Pakistan must await the examination of adequate samples from this area. Clearly the affinities of *N. oxiana* are to the east rather than to the African cobras, however.

Family VIPERIDAE

Echis carinatus (Schneider).

Pseudoboa carinata SCHNEIDER, 1801, Hist. Amph., vol. 2, p. 285 (based on a figure by Russell, 1796, Indian Serp., vol. 1, pl. 2; type locality: India: Arni, near Madras).
Echis carinata, WAGLER, 1830, Syst. Amph., p. 177.

MATERIAL EXAMINED (2). FMNH nos. 161072–161073, Kandahar, 31°36' N., 65°47' E. [1425 meters elevation], 4 November.

REMARKS. Arthropod remains constitute the recognizable stomach contents in these two juveniles. Counts and measurements are given in table 1.

Vipera lebetina obtusa Dwigubsky.

Vipera obtusa DWIGUBSKY, 1832, Essay nat. hist. Russian Emp., Moscow, p. 30 (type locality: U.S.S.R.: Jelisawetpol, Transcaucasia).
Vipera lebetina obtusa, TERENTJEV AND CHERNOV, 1940, Kratkii opred. presm. zemnov., Leningrad, ed. 2, p. 163.

MATERIAL EXAMINED (1). FMNH no. 161139, Jalalabad, 34°26' N., 70°25' E. [732 meters elevation].

REMARKS. Counts and measurements in table 1.

SUMMARY

The collection of amphibians and reptiles made by the Street Expedition to Afghanistan 1965 consists of 247 specimens, including six species of amphibians and 38 species of reptiles. Definite Afghan localities are recorded for the first time for the following species: *Agama agrorensis*, *Agama erythrogastra*, *Agama himalayana*, *Agama lehmanni*, *Agama nuristanica* (new species herein described), *Agama badakhshana* (new species herein described), *Cyrtodactylus watsoni*, *Hemidactylus flaviviridis*, *Eremias nigrocellata*, *Eryx elegans* (type was recorded as coming from Afghanistan, but no precise locality was given).

An analysis of the zoogeographic significance of this and other collections from Afghanistan is contemplated for the future.

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